REMARKS

Applicants appreciate Examiner's timely and thorough review of the application. Amendments to Figure 1 and the Claims have been done to address Examiner's concerns. No new material has been added. Reconsideration of the application is respectfully requested.

To assist in reviewing Applicants' response: where Applicants have quoted Examiner's office action, the quoted material is single-spaced and indented and Applicants' response to Examiner's concerns is in bold print.

In para. 1 of the office action, Examiner objected to the Drawings as follows:

> Figure 1 should be designated by a legend such as –Prior Art—because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Applicants have corrected Fig. 1 to comply with the MPEP and included both the corrected Fig. 1 and a marked up copy of the objected to version.

In para. 2 of the office action, Examiner objected to the claims as follows:

> Claims 1, 12, 15, 25 and 28 are objected to because of the following informalities:
>
> Regarding claim 1, lines 1-5, the claim language is awkwardly written. For example, the phrase "A hardware system, adjustable vertically as installed in a waterway upstream from at least one barrier to the downstream migration of said fish in said waterway." Examiner suggests that the language be rewritten to better state the invention.
>
> Regarding claims 12 and 15, the claim language is awkward. For example, the limitation described wherein "at least one of said at least one natural hydraulic cues is at least one visual cue that is precluded from occurring thus facilitating passage of said fish around said barrier" should be more clearly stated.
>
> Regarding claim 15, lines 3-5, the applicant has stated limitations regarding "at least of intakes of said dam." However, the claims language from which claim 15 depends does not make prior mention of a dam or intakes thereof. These limitations lack antecedent basis.
>
> Regarding claim 28, line 1, the applicant states limitation regarding "at least one additional stimulus." However, the prior claims language from which the limitation depends fails to state previous "stimulus." Please clarify.
>
> Appropriate correction is required.

Applicants have amended Claims 12, 15, 25 and 28 to address Examiner's objections. Claim 1 has also been amended to address Examiner's rejection.

In para. 3 of the office action, Examiner quotes 35 U.S.C. 102 paragraphs (b) and (e).

In para. 4 of the office action, Examiner rejects claims 1, 2, 7, 17-19, 21 and 22 under 35 U.S.C. 102(b) as being anticipated by Koch (4,437,431), stating:

> Regarding claims 1, 2, 7, 17, 21 and 22, Koch discloses a method and apparatus for diversion of migrating fish comprising a system that simulates a hydraulic cue for fish by forming increased stream flow in a body of water to the point where fish are carried in some manner around a barrier in the body of water, specifically a dam (see abstract). The body of water is a stream, which has a spillway S that is an intake for turbines for generating hydroelectric power located at T. The stream has both an upstream and a downstream side. Koch discloses entrance areas 12a, 12b, attached to conduits 10a, 10b (see Figs. 1 and 3) that have vertically adjustable depths within a body of water based on regulation of pilings (see column 4, lines 60-65). Koch further discloses conduits 10a, 10b attached to the entrance ways that collect fish once they have been brought into a hydraulic cue created by (sic)
>
> Regarding claims 2, 18 and 19, as broadly claimed by the applicant, the fish instinctively respond to the hydraulic cue formed by the increased stream flow, as they cannot retreat from it thereby minimizing strain rate variables with respect to the depth and width of the stream (see abstract).

Claims 1, 2, 7, 17-19, and 21 have been amended to address Examiner's concerns. Claim 22 is dependent on one or more of these amended claims and thus is also addressed by amending the claims from which it depends. Again, the Koch '431 patent uses an active system employing jets to form the artificial stream and an in-line high volume pump. This is exactly what Applicants avoid as detailed at p. 7, lines 7-13, p. 12, lines 5-10, p. 14, lines 5-14. The fact that Applicants not only recognized what attracts the fish, but also were able to simulate it passively, thus saving energy in the bargain, is what distinguishes an embodiment of Applicants' invention from the Koch '997 invention. If an invention is to be declared unpatentable because it recognizes and takes advantage of the laws of physics, what invention is patentable?

In para. 5 of the office action, Examiner states:

Claims 1-3, 6-10, and 17-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Johnson (6,467,997).

Regarding claims 1, 6, 7, 17, 21 and 22, Johnson discloses a method and system 10 for diversion of fish around a structure comprising a system that simulates a hydraulic cue for fish by forming a flow scoop 34 in a body of water to the point where fish are carried in some manner around a barrier in the body of water, such as a dam 14 (see column 3, lines 60-65). The body of water is a stream, which has a dam 14 with a water intake 16. The stream has both an upstream and a downstream side. Johnson discloses a frame 30 that is vertically adjustable to change angles is (sic) response to hydraulic conditions of a dam and/or the elevation of fish in a water column (see column 4, lines 55-58). Johnson further discloses that the frame 30 with bar screen panels 32 provide a gradual incline to orient fish toward a collection channel 42 that transports the fish around a dam structure (see column 5, lines 1-58).

Regarding claim 17, as broadly claimed by the applicant, Johnson's system with its inclined frame 30 and panel 32, 40, is fully capable of changing at least one horizontal eddy that would otherwise naturally occur in the upstream side of the dam 14 in the absence of the Johnson system 10.

Regarding claims 2, 18 and 19, as broadly claimed by the applicant, the fish in Johnson's system instinctively respond to the hydraulic cue formed by flow scoop thereby minimizing strain rate variables with respect to the depth and width of the stream.

Regarding claim 3, Johnson's system discloses a wedge-shaped frame 30 that functions as a collector in combination with channel 42, the frame 30 having length, width, depth, a top, a bottom, an interior, and an exterior surface wherein the frame is positioned adjacent and parallel to the upstream side of a barrier or dam 14 and wherein the top of the frame is generally parallel to the upstream side of the dam and the top of the frame is generally parallel with the surface of the body of water. Further, as broadly claimed by the applicant, Johnson's extension 34 is capable of eliminating a zone of dead water that may be adjacent the upstream side of the barrier.

Regarding claims 6, 8-10 and 20, Johnson's system discloses a frame 30 that comprises at least one panel 40 and bar screen panels 32, wherein the panels are pivotably connected to the frame permitting adjustment of the collector to the upstream side of the dam. The frame 30 in combination with channel 42 functions as the "oven hood surface bypass collector" as claimed by applicant.

Claims 1, 2, 7, 9, 10 and 17-21 have been further amended to address Examiner's concerns. Claims 3, 6, 8 and 22 are dependent on one or more of these amended claims and thus are also addressed by amending the claims from which they depend.

Again, specifically noting but a few differences in the Johnson '997 patent as now differentiated by the above amended claims:

a. **The Johnson '997 patent does not address the elimination of the vertical eddy by having an extension to an essentially horizontally oriented system (Fig. 1 and Fig. 4 at 407 of Applicant's invention).**

b. **The Johnson '997 patent does not have a movable plate (Fig. 4 at 410 of Applicants' invention) at the entrance to a collection gallery.**

c. **The Johnson '997 patent actually slows the flow of water along the front (upstream) edge of the screen as the fish proceed up the screen whereas Applicant's invention increases flow into the collection gallery on the downstream side of Applicant's structure, thus establishing the natural cue (Fig. 4 at 413 and Fig. 7 at 701, p. 7, lines 3-6).**

d. **The Johnson '997 patent does not provide for vertical adjustment of the system on the barrier (dam, etc.) while not changing the horizontal orientation of the system including the extension (wedge-shaped) with respect to the water surface as Applicant's invention provides (Fig. 4 at 412 and p. 7, lines 19-21) but rather changes the angle of the screen if necessary.**

e. **The Johnson '997 patent does not provide for altering the angle of water flow into the collection gallery by a movable articulating extension (Fig. 4 at 410, p. 15, lines 15, 16) controlled by a sensor (Fig. 4 at 411 and p. 7, lines 17-18, p. 15, lines 18-21).**

f. **The Johnson '997 patent does not provide for supporting the structure via use of flotation material in an extension (Fig. 4 at 407, 408, p. 11, lines 17-19).**

g. **The Johnson '997 patent brings fish in at the top of the structure whereas Applicant's invention brings them in at the bottom (Fig. 4 at 410, 411) where**

it is in a "shaded zone of reduced light intensity" reducing the need of the fish to rely on visual acuity to navigate (p. 7, lines 13-16).

h. The Johnson '997 patent does not provide for alternatives to natural stimuli for fish such as painting the collector gallery a neutral color, having smooth sides on the collector gallery to reduce turbulence, and introducing sound or light into the collector gallery (p. 5, line 24 to p. 6, line 4).

In para. 6 of the office action, Examiner lists allowable subject matter, stating:

> Claims 4, 5, and 11–16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 1, upon which claims 4, 5 and 11–16 depend has been amended herewith, as have Claims 11, 13, and 15.

In para. 7 of the office action, Examiner states:

> Claims 23–28 would be allowable over the prior art of record.

In para. 8 of the office action, Examiner states:

> The following is a statement of reasons for the indication of allowable subject matter:
>
> Regarding claims 4 and 23, the closest prior art of record, Johnson, fails to disclose a wedge shaped extension as described by the applicant in combination with at least one articulating extension affixed to a lower part of the fish collector gallery, in combination with the rest of the limitations claimed by the applicant.
>
> Regarding claim 5, the closest prior art of record, Johnson, fails to disclose at least one sensor for alerting change of hydraulic conditions and thereby permitting adjustment of the system, in combination with the rest of the claimed limitations.
>
> Regarding claim 11, the closest prior art of record, Johnson, fails to disclose that the panels of the system are movable vertically without changing the horizontal orientation of the system in combination with the rest of the claimed limitations.

In para. 9 of the office action, Examiner states:

> The applicant has amended claims 1, 2, 4, 7, 9–12, 14–21 and added new claims 23–28. The applicant has included material that was not presented in the

original claims. For example, the applicant amended the claims to state "a hardware system" with various details regarding that system.

Applicants have deleted all reference to "a hardware system" in the claims.

In para. 10 of the office action, Examiner states:

> Some of the applicant's arguments in the amendment filed on October 2, 2003, have been fully considered but they are not persuasive.
>
> In response to the applicant's arguments on page 24, lines 17–24, line 40 through page 25, line 4, that the references fail to show certain features of applicant's invention, it is noted that the applicant fails to detail what features the Koch and Chicha references fail to show.
>
> The applicant's arguments regarding the Johnson reference have been fully noted and have been considered in light of the amended claims.

In para. 11 of the office action, Examiner states:

> Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, this action is made final. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

No new matter has been entered via this amendment. Fig. 1 has been amended and both the amended drawing and the marked up original are provided. In view of the foregoing, it is respectfully requested that the subject application be passed to issue as amended hereby with currently amended Claims 1, 2, 7, 12, 13, 15, 17, 21, 25, 26 and 27, original Claims 3, 5, 6, 8 and 22, previously amended claims 4, 9, 10, 11, 14, 16, and 18–20, and previously presented Claims 23, 24, and 27.

Respectfully Submitted,

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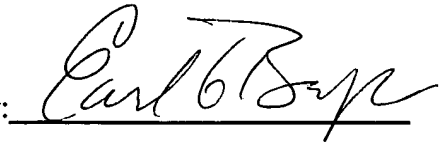
By: 

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